PATENT APPLICATION
Mo-6439
LeA 34,771

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION OF)
)
WERNER ZITZMANN ET AL)
)
SERIAL NUMBER: TO BE ASSIGNED)
)
FILED: HEREWITH)
)
TITLE: HELIOTHIS VIRESCENS)
ULTRASPIRACLE (USP) PROTEIN)
)

PRELIMINARY AMENDMENT

Box Patent Application
Assistant Commissioner for Patents
Washington, DC 20231

Dear Sir:

Prior to calculation of the filing fee and examination of the present application, please amend the application as follows:

"Express Mail" mailing label number ET146894696US
Date of Deposit July 20, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner of Patents and Trademarks, Washington, D.C. 20231

Donna J. Veatch
(Name of person mailing paper or fee)

Signature of person mailing paper or fee)

IN THE SPECIFICATION:

Please amend the specification as follows:

On page 1, after the title, please insert:

--FIELD OF THE INVENTION--

On page 1, after line 7, please insert:

--BACKGROUND OF THE INVENTION--

On page 2, after line 13, please insert:

--DETAILED DESCRIPTION--

IN THE CLAIMS:

Please cancel Claims 18-19.

Please amend Claims 1-17 as follows:

1. (Amended) An isolated nucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising a sequence selected from

(a) the sequence of SEQ ID NO: 1,

(b) sequences which have at least 85% identity with the sequence of SEQ ID NO: 1 over a length of at least 600 consecutive nucleotides,

(c) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as the sequences defined under (a) and (b), and

(d) parts of the sequences as defined under (a), (b) and (c) which encode polypeptides which have essentially the same bioactivity as a polypeptide with the amino acid sequence of SEQ ID NO: 2.

2. (Amended) A vector comprising at least one nucleic acid according to Claim 1.

3. (Amended) A vector according to Claim 2, wherein the nucleic acid molecule is linked functionally to regulatory sequences which ensure the expression of the nucleic acid in pro- or eukaryotic cells.

4. (Amended) A host cell comprising a nucleic acid according to Claim 1.

5. (Amended) A host cell according to Claim 4, wherein the host cell is a pro- or eukaryotic cell.

6. (Amended) A host cell according to Claim 5, wherein the prokaryotic cell is E. coli.

7. (Amended) A host cell according to Claim 5, wherein the eukaryotic cell is a yeast cell, mammalian cell, insect cell or plant cell.

8. (Amended) A transgenic organism, with the exception of humans, containing a nucleic acid according to Claim 1.

9. (Amended) An isolated polypeptide which is encoded by a nucleic acid according to Claim 1.

10. (Amended) A receptor comprising an EcR subunit and a polypeptide according to Claim 9.

11. (Amended) An antibody which binds specifically to a polypeptide according to Claim 9.

12. (Amended) A process for the preparation of a polypeptide which is encoded by a nucleic acid according to Claim 1, comprising the steps of:

(a) culturing a host cell comprising a nucleic acid according to Claim 1 under conditions which ensure the expression of the nucleic acid according to Claim 1, and

(b) obtaining the polypeptide from the cells or the culture medium.

13. (Amended) A process for the preparation of a nucleic acid according to Claim 1, comprising the steps of:

(a) chemically synthesizing the complete nucleic acid,

(b) chemically synthesizing oligonucleotides, labelling the oligonucleotides, hybridizing the oligonucleotides with DNA of an

insect cDNA library, selecting positive clones and isolating the hybridizing DNA from positive clones, or

(c) chemically synthesizing oligonucleotides and amplification of the target DNA by means of PCR.

14. (Amended) A regulatory region which naturally controls the transcription of a nucleic acid according to Claim 1 in insect cells and which ensures specific expression.

15. (Amended) A method of finding new active compounds for crop protection, in particular compounds which cause the activation or inhibition of a polypeptide which is encoded by a nucleic acid according to Claim 1, comprising the steps of:

(a) providing a host cell comprising a nucleic acid according to Claim 1,

(b) culturing the host cell in the presence of a chemical or a mixture of chemicals, and

(c) detecting the activation or inhibition of the polypeptide or receptor.

16. (Amended) A method of finding a compound which binds to a polypeptide according to Claim 9, comprising the steps of:

(a) contacting a polypeptide according to Claim 9 with a compound or a mixture of compounds under conditions which permit the interaction of the compound or mixture of compounds with the polypeptide, and

(b) identifying the compound which binds specifically to the polypeptide.

17. (Amended) A method for inducibly expressing target genes with a polypeptide which is encoded by a nucleic acid according to Claim 1 comprising the steps of:

(a) culturing a host cell comprising a nucleic acid according to Claim 1 under conditions which ensure the expression of the nucleic acid according to Claim 1, where the host cell comprises a target gene with suitable regulatory sequences, and

(b) contacting the host cell with a chemical which induces the expression of the target gene.

Please add the following claims:

--20. A host cell comprising a vector according to Claim 2.

21. A host cell comprising a vector according to Claim 3.

22. A transgenic organism, with the exception of humans, containing a vector according to Claim 2.

23. A transgenic organism, with the exception of humans, containing a vector according to Claim 3.

24. A method of finding new active compounds for crop protection, in particular compounds which cause the activation or inhibition of a receptor comprising an EcR subunit and a polypeptide which is encoded by a nucleic acid according to Claim 1 comprising the steps of:

(a) providing a host cell comprising a nucleic acid according to Claim 1,

(b) culturing the host cell in the presence of a chemical or a mixture of chemicals, and

(c) detecting the activation or inhibition of the polypeptide or receptor.

25. A method for inducibly expressing target genes with a polypeptide which is encoded by a nucleic acid according to Claim 1 comprising the steps of:

(a) providing a transgenic organism other than a human, comprising a target gene with regulatory sequences and a nucleic acid according to Claim 1, and

(b) contacting the transgenic organism with a chemical which induces the expression of the target gene.

26. A method according to Claim 25, wherein the transgenic organism comprises a vector comprising a nucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising a sequence selected from

(a) the sequence of SEQ ID NO: 1,

(b) sequences which have at least 85% identity with the sequence of SEQ ID NO: 1 over a length of at least 600 consecutive nucleotides,

(c) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as the sequences defined under (a) and (b), and

(d) parts of the sequences as defined under (a), (b) and (c) which encode polypeptides which have essentially the same bioactivity as a polypeptide with the amino acid sequence of SEQ ID NO: 2.

27. An isolated nucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising the sequence of SEQ ID NO: 1.

28. A isolated polypeptide which is encoded by a nucleic acid according to Claim 27.--

REMARKS

By present amendment the claims have been amended to present the claims in accordance with customary U.S. practice, care having been exercised to avoid any introduction of new matter.

The specification has been amended to include section headings in accordance with customary U.S. practice.

Claims 18-19 have been canceled, and Claims 1-17 have been amended as to form. Claims 20-28 have been added. Support for Claims 20-21 and 22-23 can be found in original Claims 4 and 8, respectively. Support for Claims 24 can be found in original Claims 9, 10 and 15, while support for Claims 25-26 can be found in original Claims 2, 8 and 17. Support for Claims 27 and 28 can be found in original Claims 1 and 9, respectively. Support for the claims may be found elsewhere throughout the specification. The amendments to the claims remove multiple dependencies and place the claims in United States form.

The amendments to the claims and the specification do not involve any introduction of new matter, whereby entry is believed to be in order and is respectively requested.

Attached is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made".

Respectfully submitted,

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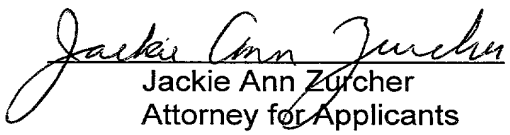

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

On page 1, after the title, was inserted:

--FIELD OF THE INVENTION--

On page 1, after line 7, was inserted:

--BACKGROUND OF THE INVENTION--

On page 2, after line 13, was inserted:

--DETAILED DESCRIPTION--

IN THE CLAIMS:

Claims 18 and 19 have been canceled.

Claims 1-17 have been amended as follows:

1. (Amended) An isolated n[N]ucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising a sequence selected from

(a) the sequence of SEQ ID NO: 1,

(b) sequences which have at least 85% identity with the sequence of SEQ ID NO: 1 over a length of at least 600 consecutive nucleotides,

(c) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as the sequences defined under (a) and (b), and

(d) parts of the sequences as defined under (a), (b) and (c) which encode polypeptides which have essentially the same bioactivity as a polypeptide with the amino acid sequence of SEQ ID NO: 2.

2. (Amended) A v[V]ector comprising at least one nucleic acid according to Claim 1.

3. (Amended) A v[V]ector according to Claim 2, [characterized in that] wherein the nucleic acid molecule is linked functionally to regulatory sequences which ensure the expression of the nucleic acid in pro- or eukaryotic cells.

4. (Amended) A h[H]ost cell [containing] comprising a nucleic acid according to Claim 1 [or a vector according to Claim 2 or 3].

5. (Amended) A h[H]ost cell according to Claim 4, [characterized in that it] wherein the host cell is a pro- or eukaryotic cell.

6. (Amended) A h[H]ost cell according to Claim 5, [characterized in that] wherein the prokaryotic cell is E. coli.

7. (Amended) A h[H]ost cell according to Claim 5, [characterized in that] wherein the eukaryotic cell is a yeast cell, mammalian cell, insect cell or plant cell.

8. (Amended) A t[T]ransgenic organism, with the exception of humans, containing a nucleic acid according to Claim 1 [or a vector according to Claim 2 or 3].

9. (Amended) An isolated p[P]olypeptide which is encoded by a nucleic acid according to Claim 1.

10. (Amended) A r[R]eceptor comprising an EcR subunit and a polypeptide according to Claim 9.

11. (Amended) A n[A]ntibody which binds specifically to a polypeptide according to Claim 9.

12. (Amended) A p[P]rocess for the preparation of a polypeptide which is encoded by a nucleic acid according to Claim 1 [according to Claim 9], comprising the [following] steps of:

(a) culturing a host cell comprising a nucleic acid according to Claim 1 [according to one of Claims 4 to 7] under conditions which ensure the expression of the nucleic acid according to Claim 1, and

(b) obtaining the polypeptide from the cells or the culture medium.

13. (Amended) A p[P]rocess for the preparation of a nucleic acid according to Claim 1, comprising the [following] steps of:

(a) chemically synthesizing the complete nucleic acid,[complete chemical synthesis in a manner known per se or]

(b) chemically synthesizing oligonucleotides, labelling the oligonucleotides, hybridizing the oligonucleotides with DNA of an insect cDNA library, selecting positive clones and isolating the hybridizing DNA from positive clones, or

(c) chemically synthesizing [chemical synthesis of] oligonucleotides and amplification of the target DNA by means of PCR.

14. (Amended) A r[R]egulatory region which naturally controls the transcription of a nucleic acid according to Claim 1 in insect cells and which ensures specific expression.

15. (Amended) A m[M]ethod of finding new active compounds for crop protection, in particular compounds which cause the activation or inhibition of a polypeptide which is encoded by a nucleic acid according to Claim 1 [according to Claim 9 or a receptor according to Claim 10], comprising the [following] steps of:

(a) providing a host cell comprising a nucleic acid according to Claim 1 [according to one of Claims 4 to 7],

(b) culturing the host cell in the presence of a chemical or a mixture of chemicals, and

(c) detecting the activation or inhibition of the polypeptide or receptor.

16. (Amended) A m[M]ethod of finding a compound which binds to a polypeptide according to Claim 9, comprising the [following] steps of:

(a) contacting a polypeptide according to Claim 9 with a compound or a mixture of compounds under conditions which permit the interaction of the compound[(s)] or mixture of compounds with the polypeptide, and

(b) identifying the compound which binds specifically to the polypeptide.

17. (Amended) A m[M]ethod for inducibly expressing target genes with a polypeptide which is encoded by a nucleic acid according to Claim 1 [by means of a polypeptide according to Claim 9] comprising the [following] steps of:

(a) culturing a host cell comprising a nucleic acid according to Claim 1 [according to one of Claims 4 to 7 or providing a transgenic organism according to Claim 8] under conditions which ensure the expression of the nucleic acid according to Claim 1, where the host cell [or the transgenic organism contains] comprises a target gene with suitable regulatory sequences, and

(b) contacting the host cell [or the transgenic organism] with a chemical which induces the expression of the target gene.

Claims 20-28 are new and have been added as follows:

--20. A host cell comprising a vector according to Claim 2.

21. A host cell comprising a vector according to Claim 3.

22. A transgenic organism, with the exception of humans, containing a vector according to Claim 2.

23. A transgenic organism, with the exception of humans, containing a vector according to Claim 3.

24. A method of finding new active compounds for crop protection, in particular compounds which cause the activation or inhibition of a receptor comprising an EcR subunit and a polypeptide which is encoded by a nucleic acid according to Claim 1 comprising the steps of:

(a) providing a host cell comprising a nucleic acid according to Claim 1,

(b) culturing the host cell in the presence of a chemical or a mixture of chemicals, and

(c) detecting the activation or inhibition of the polypeptide or receptor.

25. A method for inducibly expressing target genes with a polypeptide which is encoded by a nucleic acid according to Claim 1 comprising the steps of:

(a) providing a transgenic organism other than a human, comprising a target gene with regulatory sequences and a nucleic acid according to Claim 1, and

(b) contacting the transgenic organism with a chemical which induces the expression of the target gene.

26. A method according to Claim 25, wherein the transgenic organism comprises a vector comprising a nucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising a sequence selected from

(a) the sequence of SEQ ID NO: 1,

(b) sequences which have at least 85% identity with the sequence of SEQ ID NO: 1 over a length of at least 600 consecutive nucleotides,

(c) sequences which, owing to the degeneracy of the genetic code, encode the same amino acid sequence as the sequences defined under (a) and (b), and

(d) parts of the sequences as defined under (a), (b) and (c) which encode polypeptides which have essentially the same bioactivity as a polypeptide with the amino acid sequence of SEQ ID NO: 2.

27. An isolated nucleic acid encoding a polypeptide with the bioactivity of the ultraspiracle protein, comprising the sequence of SEQ ID NO: 1.

28. A isolated polypeptide which is encoded by a nucleic acid according to Claim 27.--